

## Brazilian Oral Research

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### Abstract




[RODRIGUES, Delaine](#); [SIRIANI, Anamaria Oliveira](#) and [BERZIN, Fausto](#). Effect of conventional TENS on pain and electromyographic activity of masticatory muscles in TMD patients. *Braz. oral res.* [online]. 2004, vol.18, n.4, pp. 290-295. ISSN 1806-8324. doi: 10.1590/S1806-83242004000400003.

Temporomandibular disorders (TMD) are characterized by several signs and symptoms, such as pain and changes in the electrical activity of masticatory muscles. Considering that transcutaneous electrical nerve stimulation (TENS) is a resource indicated to promote analgesia, the objective of this study was to evaluate the effect of TENS on pain and electromyographic (EMG) activity of the jaw elevator muscles in TMD patients. This study evaluated 35 female volunteers: 19 TMD patients (mean age = 23.04 ± 3.5) and 16 normal subjects (mean age = 23.3 ± 3.0). Transcutaneous electrical nerve stimulation (conventional mode, 150 Hz) was applied once to each group for 45 minutes. Surface electromyography (gain of 100 times and 1 kHz sampling frequency) and the visual analogue scale (VAS) were applied before and immediately after TENS application. Both VAS data and root mean square (RMS) values were analyzed using Student's *t*-test. The TMD group, compared to the control group, showed higher EMG activity of the jaw elevator muscles at rest. No difference was observed between the groups regarding maximum voluntary clenching (MVC). In TMD patients, TENS reduced both pain and EMG activity of the anterior portion of the temporal muscle, increasing the activity of the masseter muscles during MVC. It is possible to conclude that a single TENS application is effective in pain reduction. However, it does not act homogeneously on the features of the electric activity of the muscles evaluated.

Keywords : Temporomandibular joint; Electromyography; Masticatory muscles; Transcutaneous electric nerve stimulation; Facial pain.

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